

CLAIMS

What is claimed is:

1. A method of implementing packet data service at a mobile terminal in a radio-communications network, comprising:

sending or receiving data packets via a first packet data service over a first radio-communications channel comprising a first bandwidth; and

5 sending or receiving data packets via a second packet data service over a second radio-communications channel comprising a second bandwidth, the second radio-communications channel being a circuit-switched control channel.

2. The method of claim 1, wherein the first packet data service comprises an EGPRS-136 packet data service.

3. The method of claim 1, wherein the first packet data service comprises a GPRS packet data service.

4. The method of claim 1, wherein the first bandwidth comprises a 200 kHz bandwidth.

5. The method of claim 4, wherein the second bandwidth comprises a 30 kHz bandwidth.

6. The method of claim 1, wherein the second packet data service comprises a General UDP Transport Service(GUTS)/General Packet Radio Service (GPRS) packet data service.

7. A mobile terminal, comprising:
first transceiver circuitry that:

sends or receives data packets via a first packet data service over a first radio-communications channel comprising a first bandwidth; and

5 second transceiver circuitry that:

sends or receives data packets via a second packet data service over a second radio-communications channel comprising a second bandwidth, the second radio-communications channel being a circuit-switched control channel.

8. The mobile terminal of claim 7, wherein the first packet data service comprises an EGPRS-136 packet data service.

9. The mobile terminal of claim 7, wherein the first packet data service comprises a GPRS packet data service.

10. The mobile terminal of claim 6, wherein the first bandwidth comprises a 200 kHz bandwidth.

11. The mobile terminal of claim 10, wherein the second bandwidth comprises a 30 kHz bandwidth.

12. The mobile terminal of claim 7, wherein the second packet data service comprises a General UDP Transport Service(GUTS)/GPRS packet data service.

13. A method of implementing packet data service at a mobile terminal in a radio-communications network, comprising:

determining a preference between a first packet data service and a second packet data service;

determining, if the first packet data service is preferred, whether the first packet data service is available;

attaching to the first packet data service if the first packet data service is available; and

attaching to the second packet data service if the first packet data service is unavailable.

14. The method of claim 13, wherein the first packet data service comprises an EGPRS-136 packet data service.

15. The method of claim 13, wherein the first packet data service comprises a GPRS packet data service.

16. The method of claim 13, wherein the second packet data service comprises a General UDP Transport Service(GUTS)/GPRS packet data service.

17. The method of claim 13, wherein the attaching to the first packet data service further comprises:

using a EGPRS-136 control channel to attach to the first packet data service.

18. The method of claim 13, wherein the attaching to the first packet data service further comprises:

using a routing area update message to attach to the first packet data service.

19. The method of claim 13, wherein the attaching to the second packet data service further comprises:

using a routing area update message to attach to the second packet data service.

20. The method of claim 13, wherein the attaching to the second packet data service further comprises:

using an attach message to attach to the second packet data service.

21. A mobile terminal, comprising:

a memory that stores instructions; and

a processing unit that executes the instructions to:

determine a preference between a first packet data service and a second packet data service,

determine, if the first packet data service is preferred, whether the first packet data service is available,

initiate attachment to the first packet data service if the first packet data service is available, and

initiate attachment to the second packet data service if the first packet data service is unavailable.

22. The mobile terminal of claim 21, wherein the first packet data service comprises an EGPRS-136 packet data service.

23. The mobile terminal of claim 21, wherein the second packet data service comprises a General UDP Transport Service(GUTS)/GPRS packet data service.

24. The mobile terminal of claim 21, further comprising:
a transceiver that uses a EGPRS-136 control channel to attach to the first packet data service.
25. The mobile terminal of claim 21, further comprising:
a transceiver that transmits a routing area update message to attach to the first packet data service.
26. The mobile terminal of claim 21, further comprising:
a transceiver that transmits a routing area update message to attach to the second packet data service.
27. A method of servicing packet data in a radio-communication system, comprising:
receiving first packets over a first radio-communications channel comprising a first bandwidth;
forwarding the first packets, via a first path, to a packet-switched network;
receiving second packets over a second radio-communications channel comprising a second bandwidth, the second radio-communications channel being a circuit-switched control channel; and
forwarding the second packets, via a second path, to the packet-switched network.
28. The method of claim 27, wherein the first bandwidth comprises a 200 kHz bandwidth.
29. The method of claim 27, wherein the second bandwidth comprises a 30 kHz bandwidth.
30. The method of claim 27, wherein the second path comprises a mobile switching center.
31. The method of claim 30, wherein the second path further comprises a General UDP Transport Service (GUTS) teleservice server.
32. The method of claim 27, wherein the first path comprises a Serving General Packet Radio Service Serving Node.

33. A radio-communications system, comprising:

a mobile terminal that:

transmits first packets over a first radio-communications channel comprising a first bandwidth, and

transmits second packets over a second radio-communications channel comprising a second bandwidth, the second radio-communications channel being a circuit-switched control channel;

a first base station that:

receives and forwards the first packets, via a first path, to a packet-switched network; and

a second base station that:

receives and forwards the second packets, via a second path, to the packet-switched network.

34. The system of claim 33, wherein the first bandwidth comprises a 200 kHz bandwidth.

35. The system of claim 33, wherein the second bandwidth comprises a 30 kHz bandwidth.

36. The system of claim 33, wherein the second path comprises a mobile switching center.

37. The system of claim 36, wherein the second path further comprises a General UDP Transport Service(GUTS) teleservice server.

38. The system of claim 33, wherein the first path comprises a Serving General Packet Radio Service Serving Node.

39. A server, comprising:

a communication interface that receives packets transmitted from a mobile terminal using a packet-data service; and

a processing unit that processes the received packets for transmission to a Serving

General Packet Radio Service Serving Node (SGSN).

40. The server of claim 39, wherein server comprises a General User Datagram Protocol Transport Service (GUTS) teleservice server.

41. The server of claim 39, wherein the communication interface further transmits the processed packets to the SGSN.

42. The server of claim 41, wherein the communication interface uses a Base Station System GPRS Protocol (BSSGP) for transmitting the received packets to the SGSN.

43. The server of claim 39, wherein the communication interface receives the packets using a General User Datagram Protocol Transport Service (GUTS) protocol.

44. The server of claim 39, wherein the communication interface receives the packets from the mobile terminal via a mobile switching center.

45. A radio-communications network, comprising:
a mobile terminal;
a packet-switched network that selectively provides a 200 kHz packet data service to the mobile terminal; and
5 a circuit-switched network that selectively provides, in conjunction with the packet-switched network, a 30 kHz packet data service to the mobile terminal.

46. A method of providing packet data service to a mobile terminal in a radio-communications network, comprising:
providing a 30 kHz packet data service to the mobile terminal; and
selectively providing a 200 kHz packet data service to the mobile terminal based on
5 quality of service requirements of the mobile terminal.